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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/643,063	08/18/2003	Wing-Kit Choi	UCF-372	4155
7590 04/05/2005 Brians S. Steinberger 101 Brevard Avenue Cocoa, FL 32922			EXAMINER DI GRAZIO, JEANNE A	
			ART UNIT 2871	PAPER NUMBER

DATE MAILED: 04/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/643,063

Applicant(s)

CHOI ET AL.

Examiner

Jeanne A. Di Grazio

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 18 August 2003.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## DETAILED ACTION

### *Priority*

Priority to Provisional Application 60405999 (Aug. 26, 2002) is claimed.

### *Claim Objections*

Claims 6-8 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim (claim 6) claims a display of claims 3, 4 and 5. Furthermore, claims 7 and 8 depend from improper claim 6. See MPEP § 608.01(n).

Accordingly, the claims have not been further treated on the merits.

Claim 6 is objected to because of the following informalities:

As to claim 6, the limitation “an unequal voltage” is objected to as unclear. It is not clear as to what the voltage is unequal.

Appropriate correction is **required**.

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 17 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to claim 17, the limitation “applying to the pixel electrode so that a strong electric field with improved light efficiency occurs” renders the claim indefinite.

Said claim is indefinite because it is not known what is being applied to the pixel electrode to yield a strong electric field with improved light efficiency.

For examination purposes, the Examiner presumes that the limitation is met by the current prior art of record.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-5 and 11-12 are rejected under 35 U.S.C. 102(e) as being anticipated by United States Patent 6,469,765 B1 (to Matsuyama et al.)(filed: June 13, 2000).

As to claim 1, Matsuyama has with regard to Figure 4, a first substrate with a first common electrode layer (color filter substrate 900 and common electrode 500), a second substrate (800) with both a pixel electrode (300(306)) layer and a second common electrode layer (400), and potential voltages applied to respective electrodes such that a voltage difference is produced between the pixel electrode branch portions and first common electrode and between the first common electrode and the second common electrode (Column 17, Lines 17-21)(Applicant’s “means for generating an electric field between the first common electrode layer

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in the first substrate and both the pixel electrode layer and the second common electrode layer in the second substrate so that the display provides fast responses to high input data rates and allows for wide viewing angles for viewers.”). Please see the electric field lines as shown in Figure 4.

As to claim 2, an insulating film separates the pixel electrode (300) and first common electrode (400)(Column 17, Lines 46-49)(short arrows in Figure 4).

As to claims 3-5, as noted, potential differences are applied to the various electrodes.

As to claims 11 and 12, Matsuyama teaches and discloses vertical and non-vertical electric fields (Columns 17 and 18).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 9, 10 and 13-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent 6,469,765 B1 (to Matsuyama et al.)(filed: June 13, 2000) in view of United States Patent 6,819,384 B2 (to Nakanishi et al.).

As to claim 9, Matsuyama does not appear to explicitly specify a resistive film in between portions of the pixel electrode layer and the common electrode layer.

Nakanishi teaches and discloses a liquid crystal display panel capable of reducing persistence degree and a development method (Title, entire patent).

In Figure 16, a resistive insulating layer (26A) is formed between portions of pixel (25A) and common electrodes (23A). Such a configuration confirmed a reduced persistence degree (Column 7, Lines 61-62).

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Nakanishi is evidence that ordinary workers in the field of liquid crystals would have found the reason, suggestion and motivation to include a resistive insulating layer in between portions of a pixel and common electrode layer to reduce a persistence effect.

Therefore, it would have been obvious to one of ordinary skill in the art of liquid crystals at the time the invention was made to modify Matsuyama in view of Nakanishi for reduced persistence degree and for ultimately achieving a higher contrast (Column 3, Lines 1-12).

As to claim 10, Matsuyama does not appear to explicitly specify a dielectric layer adjacent a common electrode layer.

Nakanishi teaches and discloses a liquid crystal display panel capable of reducing persistence degree and a development method (Title, entire patent).

Figure 32 illustrates a dielectric layer (13) adjacent a flat electrode (12) to reinforce the lateral component of the electric field in the liquid crystal so that the liquid crystal can be driven with a lower applied voltage (Column 1, Lines 59-66).

Nakanishi is evidence that ordinary workers in the field of liquid crystals would have found the reason, suggestion and motivation to include a dielectric layer adjacent a common electrode layer to reinforce the lateral component of the electric field in the liquid crystal so that the liquid crystal can be driven with a lower applied voltage (Column 1, Lines 59-66).

Therefore, it would have been obvious to one of ordinary skill in the art of liquid crystals at the time the invention was made to modify Matsuyama in view of Nakanishi to reinforce the lateral component of the electric field in the liquid crystal so that the liquid crystal can be driven with a lower applied voltage (Column 1, Lines 59-66).

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As to claims 13-18, the method of providing a fast response and wide viewing angle to thin film transistor liquid crystal displays would have been obvious in view of the devices as taught and disclosed by Matsuyama in view of Kakanishi.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeanne A. Di Grazio whose telephone number is (571)272-2289. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim, can be reached on (571)272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jeanne Andrea Di Grazio  
Patent Examiner  
Art Unit 2871

JDG



TARIFUR R. CHOWDHURY  
PRIMARY EXAMINER